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## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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December 6, 1991

Wayde M. Hartwick HSRL-6J  
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U.S. Environmental Protection Agency  
Region 5  
77 West Jackson  
Chicago, Illinois 60604

RECEIVED  
DEC 16 1991

REMEDIAL &  
ENFORCEMENT  
RESPONSE BRANCH

Re: Review of final draft  
Feasibility Study Report,  
American Chemical Services,  
Griffith, IN

Dear Mr. Hartwick:

Enclosed you will find Indiana Department of Environmental Management comments on the final draft Feasibility Study and Assessment of Proposed Cover Systems for American Chemical Service. A copy of Proposed Cover Systems has been forwarded to Warzyn, Inc. Our review generated the following comments :

Section 2.4.3, P. 2-7, third paragraph

-The estimated extent of pretreatment required prior to discharge to the POTW should be stated.

Section 2.5.4.1, P.2-29

- Assessment of Proposed Cover Systems for section 2.5.4.1 is attached.

Section 3.3.6.1, P.3-20

- Assessment of Proposed Cover Systems for section 3.3.6.1 is attached.

Section 3.3.4.1, P. 3-16, Implementability, last sentence

- Will sufficient hydraulic capacity be available? If not, what is the estimated cost of installation of additional 12-inch piping runs to handle effluent from the groundwater treatment system.

Section 4.2.6.1, P.4-18

- Assessment of Proposed Cover Systems discusses asphalt caps in observation number 3 (Page 3).

Section 4.3.5, P. 4-68, fourth paragraph

- It should be stated in this paragraph that "it is unlikely that PCBs and other semi-volatile compounds would be flushed from wetland sediments during discharge."

Mr. Hartwick  
Page 2  
December 6, 1991

Discussion of Preferred Alternative

Staff reviewed and compared the eight (8) alternative remediation methods. Alternatives #5 and #6 were distinguished as the most appropriate remediation methods. Our review of alternatives #5 and #6 generated the following comments:

Alternative # 5 - Off-Site Incineration of Buried Drums; Off-Site Disposal of Miscellaneous Debris; In-Situ Vapor Extraction of Buried Waste and Soils; Groundwater Pumping and Treatment; and Treated Water Discharge to Wetlands

-Advantages

- Cheaper than alternative #6
- Public acceptance

-Disadvantages

- May not reduce all future site risk (direct contact)
- Contamination left on-site

Alternative # 6A - Incineration of Buried Drums; Off-Site Disposal of Miscellaneous Debris; On-Site Incineration of Waste; In-Situ Vapor Extraction of Soils; Groundwater Pumping and Treatment; and Treated Water Discharge to Wetlands  
Alternative # 6B - Same as Alternative 6A Except Waste Would be Treated with Low Temperature Thermal Treatment

-Advantages

- Better cleanup than #5

-Disadvantages

- More expensive than #5
- Low public acceptance
- Applicability of Low Temperature Thermal Treatment to the destruction of PCBs

We recommend # 5 as the preferred alternative. This recommendation was based on the belief that on-site incineration (Alternative #6) would not be publicly accepted.

If you have any further questions, please contact the site manager, John Manley, at AC (317) 243-5044.

Very truly yours,

Reggie Baker Jr., Chief  
Superfund Section  
Office of Environmental Response

ROB/JM/pm  
Enclosures

Assessment of Proposed Covers Systems  
For  
American Chemical Services

OVERVIEW

An excerpt from "Final Covers on Hazardous Waste Landfills and Surface Impoundments " EPA/530-SW-89-047 is enclosed. EPA acknowledges that other final cover designs may be acceptable, depending upon site specific conditions and upon a determination by the Agency that an alternative design adequately fulfills the regulatory requirements. However, it is the responsibility of the facility's owner or operator to prove that an alternative design will provide a level of performance that is equivalent to that described in the above-mentioned document.

Since this is an interim status facility, with no leachate collection, it is important to install a cover system that will keep infiltration to a minimum.

ALTERNATIVE 3B

In Alternative 3B, it is stated that excavation of soil will be accomplished and subjected to low temperature thermal treatment and the soil redeposited into the excavation. Further on page 4-49, first paragraph, it states that a RCRA land ban treatability variance would have to be obtained. Although, a variance under CFR 268.44 may be applied for, any waste that is subject to land disposal must be put into a unit in compliance with CFR 265.301 for any waste received after May 8, 1985. Since this waste is excavated, from its original location, it can not be redeposited into the same excavation without the requirements of CFR 265.301 being satisfied.

The feasibility study indicates that "Treatment of contaminated soils would be accomplished by natural flushing of contaminants to the water table from rainfall infiltration, followed by treatment with the ground water pump and treat system. ACS is proposing to treat residual contaminated soils (after thermal treatment) by allowing precipitation to leach contaminants out of the soil and be deposited into the ground water. This ground water would then be collected in the pump and treat system. This scenario is not recommended since this is allowing intentional contamination of the ground water. The pump and treat system may not be able to collect all the contaminated ground water. Also, this goes against the policy of minimizing the precipitation infiltrating the disposal area so as to minimize or eliminate leachate generation, thus reducing ground water contamination.

#### SECTION 2.5.4.1 CAPPING

This section states that the design life of a cap is uncertain because of the uncertain life of the synthetic materials, the uncertain amount of annual rainfall which will infiltrate the cap and the uncertain rate of waste migration which would result from any infiltrating rain water. Infiltration of rain water through a RCRA cap (especially one with a synthetic liner) is very low, if it is constructed properly. Also, the life of the synthetics has been estimated to be of a long duration (1,000 plus years). IDEM is wondering why ACS is discounting the RCRA caps based on the uncertain rainfall infiltration, when ACS is proposing to allow uncontrolled infiltration into residual contaminated soil to leach out contaminants into the ground water for possible collection by the pump and treat system?

This section also states that rigid covers such as concrete and asphalt were vulnerable to cracking and that these rigid covers would not be retained for alternative development. However, on page 3-19, Section 3.3.6.1, an asphalt cover is being pursued in the traffic area of the facility. Based on the vulnerability of the asphalt cover to cracking, it is not recommended to use the asphalt cover. Also, the asphalt cover by itself would not meet the guidance requirements for a RCRA cap (low permeable layer below the frost line and a drainage layer within the cover system). The asphalt may possibly be used as the top layer in conjunction with a two (2) foot clay layer and an equivalent one (1) foot drainage layer.

#### SECTION 3.3.6.1 CAPPING

ACS states that Asphaltic concrete exhibits a low permeability in the order of  $10^{-9}$  cm/sec. when sealed. This may be true when the asphalt is first installed. However, cracking would eventually occur over time due to freeze-thaw and vehicular traffic, thus increasing the permeability. Also, it should be noted that the soil-clay caps (RCRA cap minus the synthetic liner) can achieve a permeability in the order of  $10^{-7}$  cm/sec. If this is installed below the frost line with a drainage layer and protected during construction, the permeability should remain fairly constant.

## CONCLUSION

In conclusion the following observations are made:

1. Although the excavation and thermal treatment of the contaminated soil is a promising way to eliminate the contaminants, redepositing soil with residual contaminants (possibly not meeting land ban treatment standards) may not be allowed since the disposal area does not meet the requirements of CFR 265.301.
2. The pump and treat system is a promising way of cleaning contaminated ground water. However, it should not be relied upon to collect all ground water which is intentionally polluted by leachate generated from redeposited contaminated soil (after thermal treatment). A RCRA cap is needed to reduce any infiltration through any closed hazardous disposal site.
3. Due to the probable cracking, an asphaltic cap by itself is not recommended to provide a seal over the soil disposal area after it is thermally treated unless the soil is determined to be "clean".